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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/504,631	02/15/2000	William J. Beyda	00P7463US	8142

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Siemens Corporation
Intellectual Property Department
186 Wood Avenue South
Iselin, NJ 08830

EXAMINER

TSEGAYE, SABA

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/504,631

Applicant(s)

BEYDA ET AL.

Examiner

Saba Tsegaye

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7 and 9-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-5, 7 and 9-13 are pending. Claims 1, 9 and 13 are rejected under 35 U.S.C. 102(e) and claims 2-5, 7 and 10-12 are rejected under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 102

2. Claims 1, 9 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Dobson et al. (US 6,377,683).

Dobson discloses, in Figs. 1-3, a transceiver 10 (claimed a local modem), a transceiver 20 (claimed a remote modem), a modem 204, D/A converter 210, hybrid 212, a summer 258, an echo canceller 270 (claimed a timing unit) and A/D converter 252 (column 5, line 52-column 6, line 43). Fig. 3 shows waveform (a) that represent two frames of data transmitted from transmitter 1 at time T0; waveform (b) frames of data received at transmitter 2 at time T1; waveform (c) represents frames transmitted from receiver 2 at time T2; and waveform (d) represents frames received at receiver 1 at time T3 (claimed plurality of far end echo components) (column 6, line 43-column 7, line 20). Further, Dobson discloses, in Fig. 4, a flowchart of the echo cancellation method, which includes transmitting data signal in step 420; and receive composite signal in step 430. The received composite signal is transformed to a received composite frequency signal in step 440, which then subtracted from the received composite frequency signal in step 460 (column 7, line 43-column 8, line 15).

Claim Rejections - 35 USC § 103

3. Claims 2-5,7 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobson et al. in view of Knittle et al. (US 5,761,638).

Dobson discloses all the claim limitation as stated above. Further, Dobson discloses that once training is complete the local echo signal of any transmitted frame may be replicated by passing the transmit points through the echo canceller. The replica is then subtracted from the received signal at the output of transformer 256 via summer 258, wherein both receive and transmit data are in the **frequency domain** (column 6, lines 43-64).

However, Dobson does not expressly disclose: the data component comprising a sinusoid at a predetermined frequency (as in claims 2, 3, 5, 7, 10 and 11); and identifying echoes by determining delays between peaks of the return training sinusoid and peaks of the echo signals (as in claims 4, 5, 7 and 12).

Knittle teaches, in Fig. 2D, signals at a predetermined frequency and at differing amplitudes (column 7, lines 25-28). Further, Knittle teaches that the echo delay estimate of the channel is determined by measuring the elapsed time between transmission of the original chirp signal and the occurrence of the largest peak in the $\sin(x)/x$ pattern of the output signal of the echo parameter estimation circuitry 32.

It would have been obvious to one ordinary skill in the art at the time of the invention was made to add a method that determine delays between peaks of the return training sinusoid and peaks of the echo signal, such as that suggested by Knittle, in the method of Dobson in order to determine the echo delay estimate of the channel to a high degree of accuracy (column 5, lines 1-10). One of ordinary skill in art would have been motivated to do this because the method is

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particularly low in complexity since the subtraction (between the replica and the received signal) is done in the frequency domain. Therefore, none of the computational expenses typical of time domain methods such as interpolation, phase adjustment, etc. are necessary.

Conclusion


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Helf (US 4,99,030) discloses a full duplex communication apparatus having at least two communication apparatus having at least two communicating modem stations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (571) 272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ST
November 12, 2004


JOHN PEZZLO
PRIMARY EXAMINER